

2001 Governor's Environmental Leadership Awards-Example Applications

At the suggestion of the Leadership Awards Task Group, and with the approvals of the facilities involved, we are placing the applications of the 2001 award winners on the LDEQ public website.

Outstanding Pollution Prevention Achievement Awards

BASF Corporation, Geismar

DuPont Dow Elastomers, Pontchartrain Site, LaPlace

Marathon Ashland Petroleum, Garyville

Monsanto, Luling

Pollution Prevention Achievement Awards

International Paper, Pineville Mill, Pineville

Lockheed Martin Michoud Space Systems, New Orleans

Pioneer Americas, St. Gabriel

Outstanding Community Environmental Outreach Achievement Award

International Paper, Bastrop

2001 ENTRY PAGE

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AUG 01 2001

Title of the project Aniline Recovery from Residue Project

Applicant BASF Corporation

Address 8404 Highway 75, Geismar, LA 70734-0457

Nature of Business Chemical Manufacture

Senior Management Official/Plant Manager Otis Hall

Contact Name, Title, Phone #, FAX # Eric Hillman, Environmental Engineer Phone (225) 339-2043 Fax (225) 339-2369

E-Mail Address hillmae@basf.com

Please check appropriate box: ☒ Pollution Prevention ☐ Community Environmental Outreach

For the Pollution Prevention Category

Please limit your entry to no more than 5 pages, including this page.

1. Describe the project clearly and concisely. Follow this 6-item format. Consider a simplified drawing to save words. Entries should be for stand-alone projects, not an ongoing program.
2. Describe the environmental improvement resulting from the project. The use of standardized measures of emissions such as TRI data and hazardous waste generation Biennial Report information is encouraged.
3. Note the degree to which the results of the project contributed to exceeding regulatory compliance requirements. Were they accomplished earlier than required? How does the project exemplify environmental leadership?
4. Describe any reductions in environmental risk resulting from the project.
5. Describe how the waste management hierarchy (source reduction, recycling, treatment and disposal as last resort) was utilized in planning and implementing the project. If the project is "end of the pipe" treatment, emphasize how the hierarchy applies.
6. Highlight the innovative aspects of the project that represent a departure from "business as usual." How does the project exceed the norms of your industrial sector (or organizational counterparts)? Again, how does the project exemplify environmental leadership?

For Community Environmental Outreach Category

1. Describe the project in sufficient detail. Is it innovative? Does it rise above usual "PR" activities? Does it exceed regulatory requirements (e.g., RMP)? Each entry must be for a single project, not an overall program.
2. Describe how the project contributed to community environmental quality improvement. What indicators were used to measure the effectiveness of the project?
3. Provide statements of at least two community individuals outside the company attesting to the success of the project.

SEE OUR WEB SITE FOR PREVIOUS WINNING PROJECTS:

www.deq.state.la.us/assistance/elp

Questions should be addressed to: 225-765-0229 or 225-927-0816.

Governor's Environmental Leadership Award Application

2001

Pollution Prevention Category

BASF Corporation, Geismar Louisiana

BASF's Geismar Production Facility occupies approximately 2400 acres in Ascension Parish. Roughly 600 acres have been developed for chemical production activities. The major products produced at the site include isocyanates, ethylene glycol, hydrochloric acid, 1,4-butanediol and downstream derivatives, as well as a range of specialty chemicals including numerous amines. Uses for these chemical products include the downstream production of automotive molded parts (dashboards, headliners, seat cushions), antifreeze, corn syrup, chlorosolvent replacement degreasing solutions, plastics, fabric permanent press, and the binder in pharmaceutical tablets. More than 1800 full-time employees work at BASF's Geismar Production Facility.

Aniline Recovery From Residue Project

In 2000 the Aniline I and II units at the Geismar, Louisiana site decided to implement a project to recover aniline from aniline residue. Aniline residue is a byproduct of aniline production containing 60-70 wt% aniline. This waste stream is regulated as a hazardous waste. The aniline residue is currently burned in the Aniline incinerator. A new wiped film evaporator (WFE) will recover an estimated 2000 metric tons/yr. of aniline. The recovered crude aniline will be returned to the aniline distillation towers for purification. The remaining residue will be discharged as bottoms from the WFE and burned in the Aniline incinerator. Currently the project is mechanically complete and should start-up some time during the early second half of 2001.

The primary environmental improvement resulting from this project is the reduction of the amount of aniline residue requiring incineration. The estimated 2000 metric tons/yr. of recovered aniline will directly result in a reduction of that amount of hazardous waste generated and requiring treatment in the Aniline incinerator. A secondary environmental benefit is the reduction in air emissions associated with the incineration of aniline residue.

The aniline recovery from residue project is another example of BASF environmental leadership because it was implemented on a strictly voluntary basis. This project was not driven by current environmental regulations.

The reduction in environmental risk associated with this project can be directly related to the reduction in the amount of hazardous waste incinerated and resulting air emissions.

This project fits into the source reduction category of the waste management hierarchy. It reduces the amount of waste aniline residue requiring incineration by the addition of a final step to the production process (the WFE) to recover as much as possible of the aniline.

This can be described as an innovative project because it facilitates increased production in the Aniline I and II units and at the same time reduces the amount of hazardous waste requiring treatment by incineration and reduces air emissions. With the start-up of the Aniline II unit a bottleneck developed in the feed to the incinerator, thereby making it difficult to run at maximum production rates. This project will reduce the feed to the incinerator and facilitate higher production rates. The sale of the recovered aniline and sales associated with increased production will recover capital costs for this project. The aniline recovery from residue project is a shining example of environmental leadership because it represents a project that is good for the environment and at the same time good for the company bottom line. Projects such as this focus attention on the positive nature of waste minimization by linking it with increased production and cost savings.

2001 ENTRY PAGE

Title of the project Hazardous Wastewater Elimination Program
Applicant DuPont Dow Elastomers Pontchartrain Site
Address 560 Highway 44 LaPlace, LA 70068-6908
Nature of Business Manufacture of Neoprene Synthetic Rubber
Senior Management Official/Plant Manager Guy D. Tenini - Plant Manager
Contact Name, Title, Phone #, FAX # R. Martin Guidry, Technology Associate
Phone 504-536-5338 Fax 504-536-5423
E-Mail Address R-Martin.Guidry@dupont-dow.com
Please check appropriate box: ☒ Pollution Prevention ☐ Community Environmental Outreach

For the Pollution Prevention Category

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NOMINATION FOR 2001 GOVERNOR'S ENVIRONMENTAL LEADERSHIP AWARDS

NOMINEE:

DuPont Dow Elastomers L.L.C.
Pontchartrain Site
560 Highway 44
LaPlace, Louisiana 70068-6908 (504) 536-5338

PROJECT DESCRIPTION:

DuPont Dow Elastomers Pontchartrain Site employees have implemented successfully a Hazardous Wastewater Elimination Program to cease injecting hazardous wastewaters into the three onsite hazardous waste underground injection wells. This project is within the Pollution Prevention category of the Governor's Environmental Leadership Awards Program.

Historically personnel at the Pontchartrain Site have injected an annual average of approximately 420,000,000 lbs of hazardous wastewaters into the three onsite hazardous waste underground injection wells (average of 1998-2000 LDEQ Annual Hazardous Waste Report data). Prior to this hazardous waste reduction program, injected wastewaters consisted of process rinsewaters collected in unit sumps and trenches, rainwater contacting process units, scrubber waters from the site hazardous waste incinerator and HCl Recovery Unit (a halogen acid furnace), residual spent solvent from equipment cleaning and decontamination and occasional spills. These wastewaters from throughout the site were aggregated into one of three hazardous wastewater tanks and then conditioned with hydrochloric acid and/or brine to meet regulatory and equipment structural integrity requirements. The conditioned wastewaters were then filtered and injected into the site underground injection wells.

In 1995 a site team developed a comprehensive plan for eliminating hazardous wastewaters being injected into the underground injection wells and thus significantly reducing the quantity of hazardous wastes generated at the Pontchartrain Site. This Hazardous Wastewater Elimination Program contained five major projects – all of which have been implemented successfully by July, 2001:

- Shutdown the onsite hazardous waste incinerator because of onsite and corporate waste minimization successes. Transfer the remaining onsite liquid organic waste streams from the incinerator to the onsite HCl Recovery Unit where energy and chlorine values are recovered. Eliminate the hazardous waste incinerator scrubber water stream.
- Delist as a hazardous waste the HCl Recovery Unit scrubber water stream because analyses confirm the lack of any hazardous constituents at levels of concern.
- Recover residual spent solvents used in equipment cleaning and decontamination and combust in the HCl Recovery Unit to recover energy and chlorine values.
- Eliminate all spills to the extent possible and put in place programs and equipment to isolate any potential spills from the injection well feed system.
- Eliminate through segregation and isolation hazardous wastes in laboratory wastewaters.

The successful implementation of these projects has reduced hazardous wastes generated at the Pontchartrain Site approximately 420,000,000 pounds per year. Furthermore, organic chlorides in streams now combusted in the HCl Recovery Unit are recovered as aqueous hydrochloric acid that is used onsite.

ENVIRONMENTAL IMPROVEMENTS AND RISK REDUCTION:

The successful implementation of this program has eliminated injecting hazardous wastewaters into the Pontchartrain Site underground injection wells and has reduced the quantity of hazardous wastes generated by the Pontchartrain Site personnel by approximately 420,000,000 pounds per year as reported on the LDEQ Annual Hazardous Waste Report. Furthermore, the organic constituents formerly injected in the underground injection wells are now combusted in the HCl Recovery Unit where their energy and chlorine values are recovered. Eliminating the hazardous nature of the injected stream improves the quality of the environment and reduces risk to the offsite population and to the employees. These benefits improved worker and community health and safety.

Site personnel implemented this project on a voluntary basis since there are no current or anticipated environmental regulations requiring eliminating hazardous wastewaters from underground injection wells. The ability of site personnel to initiate voluntarily a comprehensive assessment of site operations and to develop an integrated plan that significantly reduced hazardous wastes and eliminated hazardous wastewaters from being injected into the site underground injection wells exemplifies continuing environmental leadership at the Pontchartrain Site.

WASTE MANAGEMENT HIERARCHY:

In planning and implementing the Hazardous Wastewater Elimination Program DuPont Dow Elastomers personnel used source reduction and recycling to reduce hazardous waste generation by 420,000,000 pounds per year and to eliminate injecting hazardous wastewaters into the site underground injection wells. Source reduction and recycling are the two highest levels of the waste management hierarchy.

INNOVATIVE ASPECTS:

The Hazardous Wastewater Elimination Project represents an innovative approach to environmental improvement by first assessing comprehensively all site operations for impact on underground injection well operations and then developing an integrated plan to eliminate all hazardous wastewaters from the injection well feed system and at the same time significantly reducing the quantity of hazardous wastes generated.

2001 ENTRY PAGE

Title of the project Spent KOH Recycling Project
Applicant Marathon Ashland Petroleum LLC
Address Highway 61 at Marathon Avenue, Garyville, Louisiana 70051
Nature of Business Petroleum Refinery
Senior Management Official/Plant Manager Larry M. Echelberger, Division Manager
Contact Name, Title, Phone #, FAX # Terry Persaud, Environmental Coordinator, 504/535-7210, 504/535-7710
E-Mail Address tcpersaud@mapllc.com

Please check appropriate box: ☒ Pollution Prevention ☐ Community Environmental Outreach

For the Pollution Prevention Category

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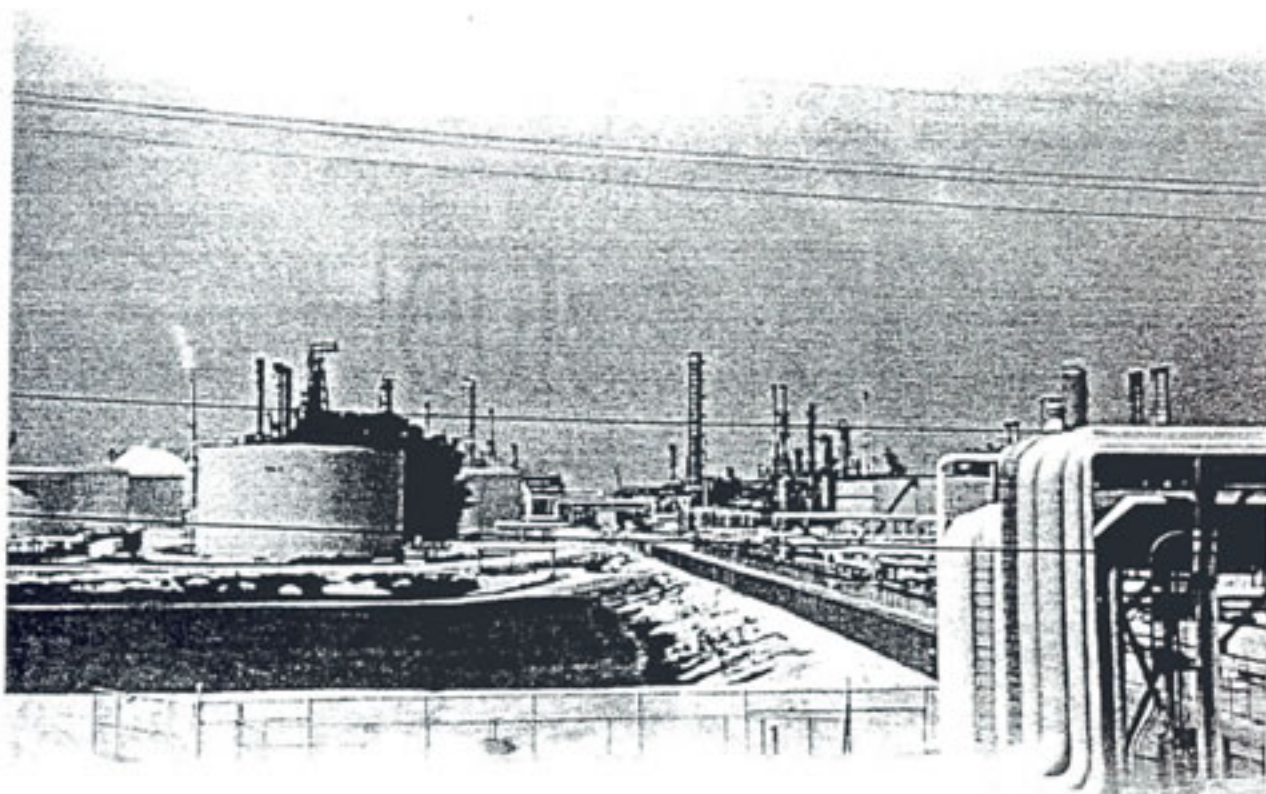
POLLUTION PREVENTION

INTRODUCTION

This application submittal is presented in the format specified in the application brochure. Any additional detail you may require can be provided upon request.

The Louisiana Refinery Division (LRD) of Marathon Ashland Petroleum LLC (MAP) operates a fully integrated petroleum refining facility that is located approximately 8 miles west of LaPlace and 35 miles northwest of New Orleans, Louisiana in St. John the Baptist Parish. The facility is the last grass roots petroleum refinery built in the U.S. and operates 24 hours a day, 365 days per year. It has a rated capacity of 255,000 barrels per day (BPD) and processes both foreign and domestic crude into a variety of products. The primary function of the refinery is to process crude oil into gasoline, diesel, No. 6 fuel oil and asphalt. Sulfur, butane, propane, propylene, and kerosene are produced as secondary products.

The LRD is pleased to submit this application for your consideration under the Pollution Prevention category of the 2001 Governor's Environmental Leadership Awards. This submittal details MAP's efforts aimed at stopping the treatment and disposal of spent Potassium Hydroxide (spent KOH) solution by replacing it with recycling and reuse thereby moving it higher up in the waste management hierarchy.



POLLUTION PREVENTION

OVERVIEW OF LRD WASTE MINIMIZATION AND POLLUTION PREVENTION PROGRAMS

The LRD has been practicing waste minimization and pollution prevention for a number of years and successfully completed several major projects which have resulted in significant reductions in waste generation rates. Prior waste reduction and recycling accomplishments are reflected in Figures 1, 2, and 3.

As presented in Figure 1, air toxic emissions from the facility have decreased from 1991 to 1998. Increases in the air toxic emissions from 1999 and 2000 reflect the reporting of sulfuric acid mist on a consistent basis with SARA reporting, and increased production. Despite increases in production and refinery expansions, the emissions in 2000 are 56 percent less than the emissions in 1991.

As reflected in Figure 2, hazardous waste disposed by the LRD has also decreased by 99 percent from 8,000,000 pounds in 1991 to 55,000 pounds in 2000. Since the 1991 base year does not include hydrotreating catalyst, it is not reflected in Figure 2. However, hydrotreating catalyst was classified as a listed hazardous waste and required reporting in 1999. In 1999 and 2000, 415,000 pounds and 1,545,000 pounds, respectively of hydrotreating catalyst were reclaimed or regenerated.

Figure 3 illustrates similar reductions in onsite SARA reportable emissions to land, air and water from 1991 to 1998. In 1999 and 2000, improved data collection resulted in more accurate estimates of nitrate emissions which accounts for the increases in those two years. Despite the increase in reported TRI emissions for 1999 and 2000, the LRD remains one of the lowest emitting refineries on a pound emitted per barrel processed basis.



POLLUTION PREVENTION

PROJECT DESCRIPTION

The Alkylation Unit (Alky Unit) performs a critical function in the overall operation of the refinery. The Alky Unit takes in olefins as feed and produces a high octane material that is blended with other materials to produce gasoline. Octane is a measurement used to measure the amount of "knock" produced by an engine while running.

One of the by-products of the Alkylation process is spent Potassium Hydroxide (spent KOH), a Potassium Fluoride in water solution. This spent KOH is produced when fresh KOH is used to remove free Hydrofluoric Acid from various process streams. The spent KOH is sent to a vessel called a reaction vat, where the solution is mixed with calcium chloride resulting in the fluorides being precipitated out of solution. The precipitate is removed in the neutralization pit before the solution is sent to the refinery's Wastewater Treatment Plant (WWTP) for treatment. After treatment in the WWTP, it is discharged to the Mississippi River.

This project involved modifications that allows the refinery to send the spent KOH as feed to an offsite recycling plant instead of treating it and discharging it to the Mississippi River. The recycling plant takes the spent KOH and passes it through the HARDTAC® process. The HARDTAC® process is an innovative recycling process developed by Dupont in which the spent KOH is recycled to produce two products - fresh Potassium Hydroxide (KOH) which is reused in the refinery's Alky Unit, and synthetic fluorospar (calcium fluoride) which is used in the production of Hydrofluoric Acid and other uses.

Although this material was being treated within the refinery's WWTP in compliance with applicable regulations and permit limits, this proactive recycling and reuse project is another example of MAP's commitment to conservation of resources and environmental protection.



POLLUTION PREVENTION

ENVIRONMENTAL IMPROVEMENTS AND REDUCTION IN ENVIRONMENTAL RISKS

The environmental improvements and reduction in environmental risks associated with this project include:

- The recycling process is an innovative process that takes spent KOH and produces two products - fresh Potassium Hydroxide (KOH) and synthetic fluorospar (calcium fluoride).
- Fresh Potassium Hydroxide produced from this recycling process is reused in the refinery's Alky Unit.
- The synthetic fluorospar is sold for use in the production of Hydrofluoric acid and other industries.
- This project moves the spent KOH higher up in the waste management hierarchy from treatment and disposal to recycle and reuse.
- In August of 2000, the refinery started sending spent KOH for recycle. In the one year period between August 2000, and July 2001, about six (6) millions pound of spent KOH has been recycled.
- As a result of this project, MAP has eliminated the discharge of approximately 235 thousand pounds per year of flouride to the Mississippi River.





LOUISIANA REFINING DIVISION / SUMMARY OF AIR TOXIC EMISSIONS EMITTED FROM MARATHON (GARYVILLE)
(AS REPORTED IN THE ANNUAL TOXIC EMISSION DISCHARGE INVENTORY (TED) REPORT)

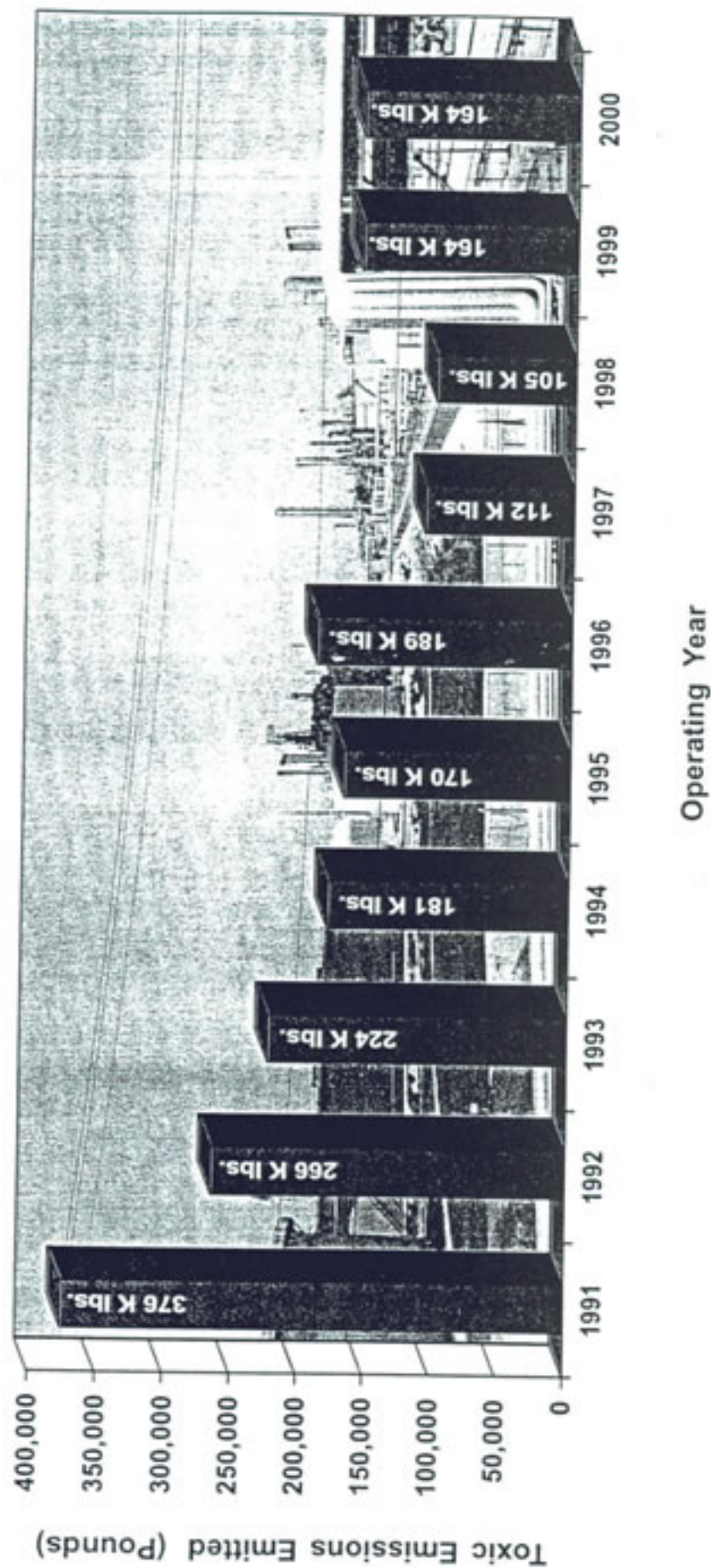
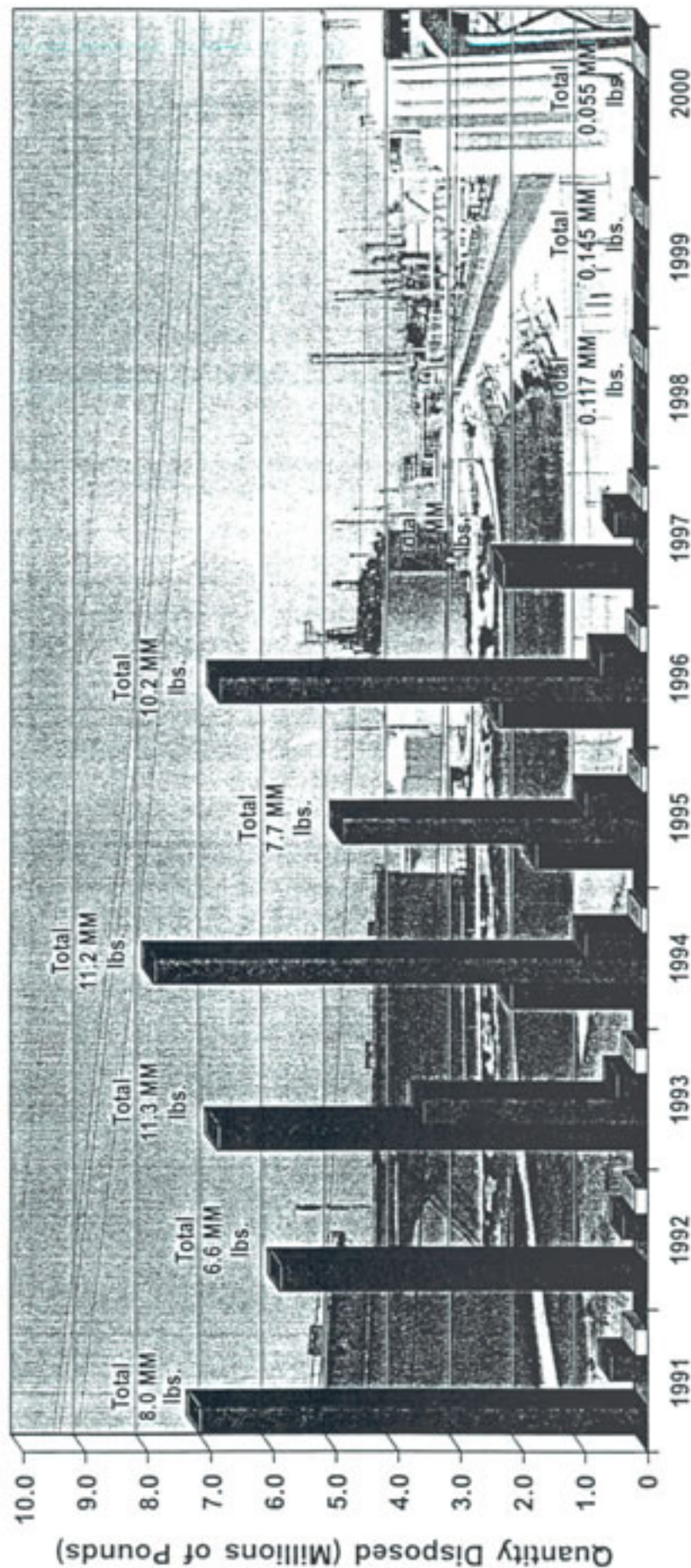


Figure 1



LOUISIANA REFINING DIVISION / SUMMARY OF HAZARDOUS WASTES DISPOSED BY MARATHON (GARYVILLE)
(BOTH ON-SITE AND OFF-SITE VALUES)



Operating Year

LEGEND

- Wastewater Sludges (K048, K049, K050, K051, F037 & F038)
- Ignitable Wastes (ASO, Paint Waste, Paint Thinner)
- Reactive Waste (Hydrotreating Catalyst)
- All Other Characteristic Wastes (D002, D004 D018, etc.)

Figure 2



LOUISIANA REFINING DIVISION / ONSITE SARA EMISSIONS TO LAND, AIR, AND WATER

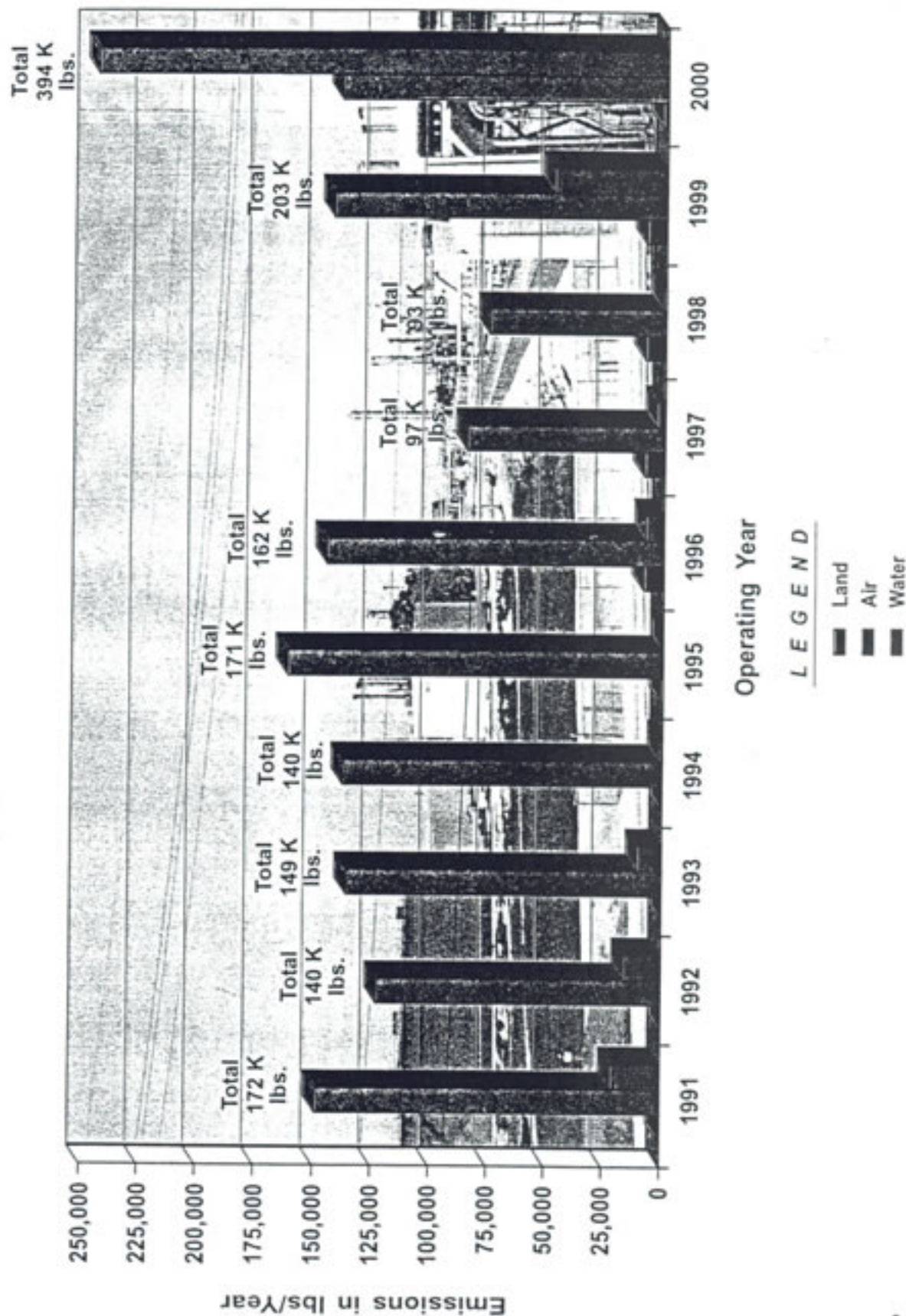


Figure 3

**Louisiana Environmental Leadership Pollution Prevention Program
2001 Governor's Environmental Leadership Award**

Title of Project:	Retrofit of Existing Conventional Glyphosate Process
Applicant:	Monsanto Company
Address:	P.O. Box 174, Luling, LA 70070
Nature of Business:	Manufacturing: herbicides, pharmaceuticals & specialty chemicals
Plant Manager:	Roy J. Breaud Jr.
Contact Name, Title,	Andrea Morrisard, Environmental Engineer
Phone #, FAX #:	985-785-3467, 985-785-3874
E-Mail Address:	andrea.p.morrisard@monsanto.com
Activity Type:	Pollution Prevention

Louisiana Environmental Leadership Pollution Prevention Program
2001 Governor's Environmental Leadership Award

Retrofit of Existing Conventional Glyphosate Process

1. Describe the project.

This project involved the retrofit of an existing production unit utilizing new technology designed to significantly improve the glyphosate manufacturing process. Compared with the previous process, this new technology reduces impurities formed in the glyphosate manufacturing process at the source. Although new production units have been built at several Monsanto facilities using this new technology, this project took the innovative approach of incorporating this technology into an existing conventional type process to recognize the same benefits.

In September 2000, a plant experiment began to assess the potential success of a retrofit. With a focus on pollution prevention even during the plant experiment phase, the Monsanto Luling Team took advantage of reusing raw materials used at a sister site in Muscatine, Iowa versus purchasing virgin material. This change in thinking resulted in a savings of 3,000 pounds of material that would have normally been sent offsite.

By exploring new ways to use the significant advancements we've made in glyphosate manufacturing technology, this project has resulted in a significant reduction in waste generation, as well as, reduced energy and water usage as noted below. At this time the plant test has been successfully completed and progress towards a permanent retrofit has already begun with final installations to be completed in November 2001.

2. Describe the environmental improvement resulting from the project. The use of standardized measures of emissions such as TRI data and hazardous waste generation Biennial Report information is encouraged.

Reductions achieved through retrofitting the existing conventional glyphosate manufacturing process versus continuing operation with no changes are as follows:

Demineralized Water Usage.....	44,000,000 gallons since September of 2000
Flow to Biosystem.....	14,000,000 gallons since September of 2000
Biosludge.....	350,000 pounds since September of 2000
Solid Process Waste to Landfill.....	1,300,000 pounds since September of 2000
SARA 313 Air Emissions.....	536 pounds per year

3. Note the degree to which the results of the project contributed to exceeding regulatory compliance requirements.

This project a voluntary effort initiated by Monsanto personnel.

4. Describe reductions in environmental risk resulting from the project.

There are several reductions in environmental risk as a result of this project. The reduction in solid waste generation contributes directly to an equivalent reduction in landfill space usage, which in turn results in less frequent construction of new landfills and landfill cells. The reduction in water usage and thus flow to on-site wastewater treatment facilities results in reduced discharge to the Mississippi River, and has reduced the need of on-site deepwell disposal capacity.

5. Describe how the waste management hierarchy (source reduction, recycling, treatment and disposal) was utilized in planning and implementing the project.

This project used the first level in the waste minimization hierarchy, source reduction, by implementing new technology to produce the same amount of product, using less resources (i.e. water and energy), and generating less waste.

6. Highlight the innovative aspects of the project that represent a departure from "business as usual."

Our manufacturing teams designed and modified an existing operating facility utilizing the new generation technology used by several existing Monsanto facilities. This innovative approach has allowed for greater production while using less resources and generating less waste. This enhancement has allowed us to meet increasing market demands without having to construct a new grassroots facility, which in and of itself represents a significant conservation of resources. Additionally, this idea of retrofitting existing facilities will be implemented to achieve the same benefits at additional Monsanto glyphosate manufacturing facilities throughout the world.

Marketing Reclaimed Fiber as a Beneficial Product

2001 Governor's Award Entry

International Paper, Pineville Mill

2001 Governor's Environmental Leadership Award Entry

Project Title: Marketing Reclaimed Fiber as a
Beneficial Product

Applicant: International Paper, Pineville Mill

Address: 300 Williams Lake Road, P.O. Box 5870
Pineville, LA 71360

Nature of Business: Paperboard Manufacture

Mill Manager: Kirt J. Cuevas

Contact: Mike Cook, EHS Dept Engineer
318/441-4395 (Fax-4387)

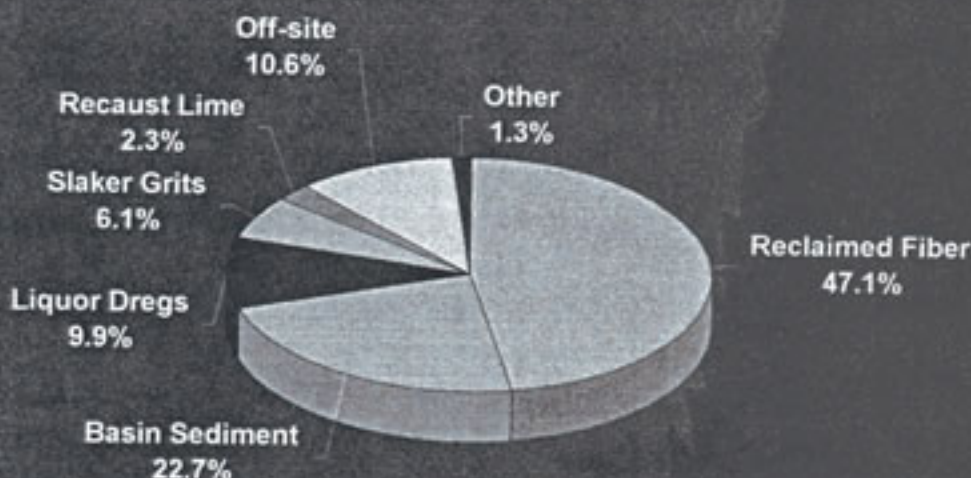
Project Type: Pollution Prevention

Marketing Reclaimed Fiber as a Beneficial Product

Project Description

In 2000, fiber reclaimed from wastewater treatment clarification represented the largest solid waste stream sent to landfills from International Paper's Pineville Mill. In recognition of the need to conserve valuable landfill space and reduce long-term costs associated with waste disposal, the Pineville Mill sought and **obtained approval to market the reclaimed fiber as a beneficial product.**

Landfilled Waste Streams (Volume Percentage)



Approval from the **Louisiana Department of Environmental Quality (LDEQ)** had been obtained in the form of a conditional solid waste exemption for land application. But the condition for land application was that the reclaimed fiber must meet the specifications of the **Louisiana Department of Agriculture and Forestry (LDAF)**

After State collection and testing of reclaimed fiber samples verified that the nitrogen, phosphorus, potassium, calcium, and other ingredients are beneficial to the soil, mill staff **obtained written confirmation from the LDAF verifying that the reclaimed fiber meets LDAF specifications for beneficial land application.** The September 2000 letter stated that the material can be used beneficially as a soil amendment or nutritional supplement. This met the condition for the solid waste exemption, enabling the mill to market the reclaimed fiber as a soil supplement.

After all approvals were obtained, the mill began the process of marketing the reclaimed fiber to the local community as a soil amendment and mulching material.

Environmental Benefits

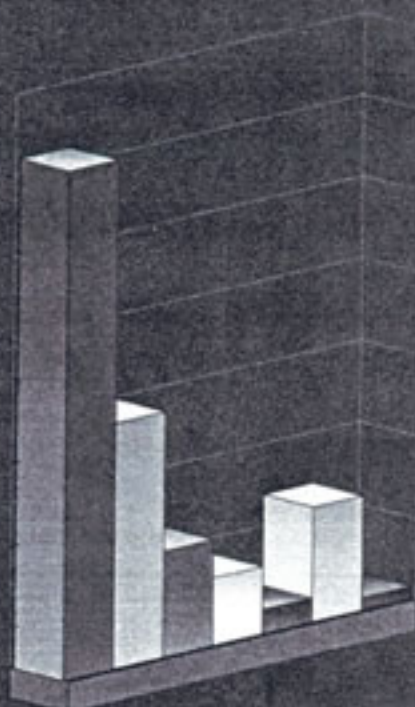
This project has a significant impact on environmental stewardship in at least two distinct ways: the eliminating of a major solid waste stream that was being sent to an industrial landfill

Marketing Reclaimed Fiber as a Beneficial Product

Landfilled Waste Streams (Cubic Yards Per Day)

■ Reclaimed Fiber
■ Basin Sediment
■ Liquor Dregs
■ Slaker Grits
■ Recaust Lime
■ Off-site
■ Other

35
30
25
20
15
10
5
0



and the benefiting of the soil quality by the addition of enriching materials present in the reclaimed fiber.

(1) Eliminating of Solid Waste Stream - The result of the approval received from the LDEQ was that the reclaimed fiber would be "exempted" from being classified as "solid waste" as long as it meets the specifications for land application as prescribed by the LDAF. Therefore, the reclaimed fiber, in effect, has become a product (rather than a waste) and placed into

commerce. That is, material that was previously sent to an industrial landfill can now be marketed for off-site beneficial use. Removing this material from solid waste disposal can save up to **11,000 cubic yards per year of valuable landfill space.**

(2) Benefits to the Soil - This project results in the "beneficial" use of the reclaimed fiber -- providing nutritional value back to the soil -- rather than continuing to "landfill" the fiber. Thus, enriching nutrients, such as nitrogen, phosphorus, potassium, and calcium, that are present in the fiber are now being returned to the earth from which they came. **This completes the ecological cycle for such nutrients and enhances future plant growth.**

Environmental Leadership

This project demonstrates the Pineville Mill's commitment to and leadership in promoting stewardship of the environment through activities well beyond the level required by regulations or permits.

Marketing Reclaimed Fiber as a Beneficial Product

For example, although the Pineville Mill has an on-site permitted industrial solid waste landfill where reclaimed fiber can be placed for many years to come, the mill staff determined to identify beneficial uses for this material. This demonstrates the mill's commitment to continual reduction in the environmental impact of its operations, which is an activity that goes beyond regulatory requirements.

In addition, we believe that this project demonstrates significant environmental leadership through the impact that the project may have on future projects of a similar nature, both at this mill and at other facilities. In past years, beneficial use projects in Louisiana have required the maintaining of cradle to grave tracking and management responsibilities by the generator, the obvious result being to stifle innovation in the beneficial use application of byproducts to the land. The approval process employed for the reclaimed fiber is an example in which the former waste stream is no longer classified as "solid waste." In marketing the fiber as a soil supplement product, ownership is transferred completely to the purchaser and the mill does not retain future management responsibilities associated with the customer's land application. Even so, the new customer is provided sufficient guidance regarding proper end use management (see item 2 from the release/acknowledgment form excerpted below). **The long-term effect of this methodology is that creativity and innovation is encouraged, paving the way for future beneficial use opportunities of a similar nature.**

Reductions in Risk

Removal of reclaimed fiber from solid waste disposal reduces environmental risk by: (1) reducing waste management operations and the associated risks to the environment that are needed and (2) reducing the future need to develop additional forest lands to add capacity to the Mill's industrial landfill. Thus, the project can be viewed as having

RELEASE/ACKNOWLEDGEMENT - RECLAIMED FIBER

I hereby acknowledge receipt of and accept full ownership of reclaimed fiber, which originates from International Paper's Pineville Mill, upon the following terms and conditions:

2. I agree to abide by the following and to ensure that any subsequent owner of this material is aware of the responsibility to receive appropriate approvals for land application. While being transported, the reclaimed fiber must be covered if it is likely to be blown out of the vehicle. If the reclaimed fiber or a product manufactured using the reclaimed fiber is to be land applied in Louisiana, the owner of this material is responsible for contacting the Louisiana Department of Agriculture and Forestry to obtain the necessary approval for end use. If the reclaimed fiber or a product manufactured using this material is to be land applied outside the State of Louisiana, the owner of this material is responsible for obtaining the necessary approvals from government agencies for land application.

Dated: _____ Signature: _____
(Name spelled out)

SIGNATURE ACKNOWLEDGED BY: _____
(Mill Representative)

This Form Provides Valuable Environmental Management Information to Purchasers

Marketing Reclaimed Fiber as a Beneficial Product

a very positive effect on reducing the needs for landfill space, waste management, and the associated risks of the unending search for more and more landfill capacity.

Waste Management Hierarchy

As described previously, the approval for beneficial use received from the LDEQ came in the form of a solid waste regulatory exemption. That is, when used beneficially, the reclaimed fiber is declassified as a "solid waste" and becomes a marketable byproduct of papermaking. Hence, the reclaimed fiber has become, like turpentine, another beneficial marketable byproduct of the papermaking process. Therefore, **this project has resulted in a source reduction through the elimination of a solid waste stream.**

Innovative Ingredients to the Project's Success

"Business as Usual" for beneficial use projects usually involves State approval of a beneficial use plan which is managed by the generator of the waste stream. In such cases, the waste is forever considered a waste and is never removed from the jurisdiction of the waste lexicon. Such an approach is outdated and unworkable. As a result, **this project employed an approach significantly different from the norm.**

Obtaining the conditional solid waste exemption and then meeting that condition was the innovative method employed. This allowed for the transfer to the purchaser the responsibilities for proper material use and management, just as a purchaser of fertilizer is responsible for proper handling of that product. **Rather than having a waste stream that is beneficially used, the Pineville Mill now has a new byproduct of its papermaking process.**

PRESS INFORMATION

INTERNATIONAL PAPER, PINEVILLE MILL
Marketing Reclaimed Fiber as a Beneficial Product
Rapides Parish

In 2000, fiber reclaimed from wastewater treatment clarification represented the largest solid waste stream sent to landfills from International Paper's Pineville Mill. In recognition of the need to conserve valuable landfill space and reduce long-term costs associated with waste disposal, the Pineville Mill sought and obtained approval to market the reclaimed fiber as a beneficial product. Approval from the Louisiana Department of Environmental Quality (LDEQ) had been obtained in the form of a conditional solid waste exemption for land application. But the condition for land application was that the reclaimed fiber must meet the specifications of the Louisiana Department of Agriculture and Forestry (LDAF). After State collection and testing of reclaimed fiber samples verified that the nitrogen, phosphorus, potassium, calcium, and other ingredients are beneficial to the soil, mill staff obtained written confirmation from the LDAF verifying that the reclaimed fiber meets LDAF specifications for beneficial land application. This met the condition for the solid waste exemption, enabling the mill to market the reclaimed fiber as a soil supplement.

This project has a significant impact on environmental stewardship in at least two distinct ways:

(1) Eliminating a Solid Waste Stream - The result of the approval received from the LDEQ was that the reclaimed fiber would be "exempted" from being classified as "solid waste" as long as it meets the specifications for land application as prescribed by the LDAF. Therefore, the reclaimed fiber, in effect, has become a product (rather than a waste) and placed into commerce. The removal of this material from solid waste disposal can save up to **11,000 cubic yards per year of valuable landfill space.**

(2) Providing Benefits to the Soil - This project results in the "beneficial" use of the reclaimed fiber – providing nutritional value back to the soil – rather than continuing to "landfill the fiber. Thus, enriching nutrients, such as nitrogen, phosphorous, potassium, and calcium, that are present in the fiber are now being returned to the earth from which they came. **This completes the ecological cycle for such nutrients and enhances future plant growth.**

2001 ENTRY PAGE

Refer to: 01MO-0524

Title of the project Waste Reduction and Material Recovery Project
Applicant Lockheed Martin Space Systems Company
Address 13800 Old Gentilly Road, New Orleans, LA 70129
Nature of Business Space Flight Hardware Manufacturing
Senior Management Official/Plant Manager Reynold J. Abadie, P.E.
Director, Facilities & Environmental Opns.
Contact Name, Title, Phone #, FAX # Rebecca J. Jordan
Chief, Pollution Prevention Projects
E-Mail Address (504) 257-3436 - (504) 257-4450 (FAX)
Rebecca.Jordan@maf.nasa.gov

Please check appropriate box: ☒ Pollution Prevention ☐ Community Environmental Outreach

For the Pollution Prevention Category

Please limit your entry to no more than 5 pages, including this page.

1. Describe the project clearly and concisely. Follow this 6-item format. Consider a simplified drawing to save words. Entries should be for stand-alone projects, not an ongoing program.
2. Describe the environmental improvement resulting from the project. The use of standardized measures of emissions such as TRI data and hazardous waste generation Biennial Report information is encouraged.
3. Note the degree to which the results of the project contributed to exceeding regulatory compliance requirements. Were they accomplished earlier than required? How does the project exemplify environmental leadership?
4. Describe any reductions in environmental risk resulting from the project.
5. Describe how the waste management hierarchy (source reduction, recycling, treatment and disposal as last resort) was utilized in planning and implementing the project. If the project is "end of the pipe" treatment, emphasize how the hierarchy applies.
6. Highlight the innovative aspects of the project that represent a departure from "business as usual." How does the project exceed the norms of your industrial sector (or organizational counterparts)? Again, how does the project exemplify environmental leadership?

For Community Environmental Outreach Category

1. Describe the project in sufficient detail. Is it innovative? Does it rise above usual "PR" activities? Does it exceed regulatory requirements (e.g., RMP)? Each entry must be for a single project, not an overall program.
2. Describe how the project contributed to community environmental quality improvement. What indicators were used to measure the effectiveness of the project?
3. Provide statements of at least two community individuals outside the company attesting to the success of the project.

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www.deq.state.la.us/assistance/elp

Questions should be addressed to: 225-765-0229 or 225-927-0816.

Executive Order (EO) 13101, "Greening the Government through Waste Prevention, Recycling, and Federal Acquisition" was issued in 1998, prompting NASA to set an agency goal of achieving 35% waste diversion by 2010. Lockheed Martin initiated an agreement with NASA to develop a Waste Reduction and Material Recovery Project that would result in meeting reduction goals, reducing costs, and would be beneficial to NASA, Lockheed Martin, MAF employees, and the environment.

Project Description

Our waste diversion/recycling project began with a site survey of MAF waste to determine which materials could be recovered from our waste to avoid landfill disposal. Based on this survey it was concluded that all types of paper (white and mixed), cardboard, aluminum cans, and wood could be included in the initial scope of this project with the potential for expansion at a later date.

Lockheed Martin was interested in developing a project that would result in waste diversion and recycling with minimal capital costs and minimal impact to our core business of External Tank production. Hiring support personnel and committing additional funding was not considered a viable option.

The primary value Lockheed Martin hoped to achieve from this waste diversion/recycling project was reduced non-hazardous waste quantities and disposal cost. A partnership was sought with a vendor/contractor who would be willing to operate onsite at MAF, collect the selected waste streams and find markets for these wastes. The primary value offered to the partner would be the profits from the sale of the recovered materials. These profits would provide an incentive to effectively screen the waste stream for recyclable materials. The more effective their waste diversion process, the more they would profit. The Legacy Project, a small, woman-owned New Orleans recycling company was awarded this contract through an open competitive bid process.

When presented with the task of collecting the materials listed in the scope of the project, Legacy welcomed the challenge. They developed a proposal that is a win-win proposition for all parties involved. The Legacy Project maintains an on-site staff and provides all materials and services necessary to collect and sell the recyclable materials. They profit from the sale of these materials while Lockheed Martin implements an environmentally beneficial recycling project with minimal costs or impacts to our core business functions. The project started in April 2000 when the first training and education class was conducted.

Waste Management Hierarchy

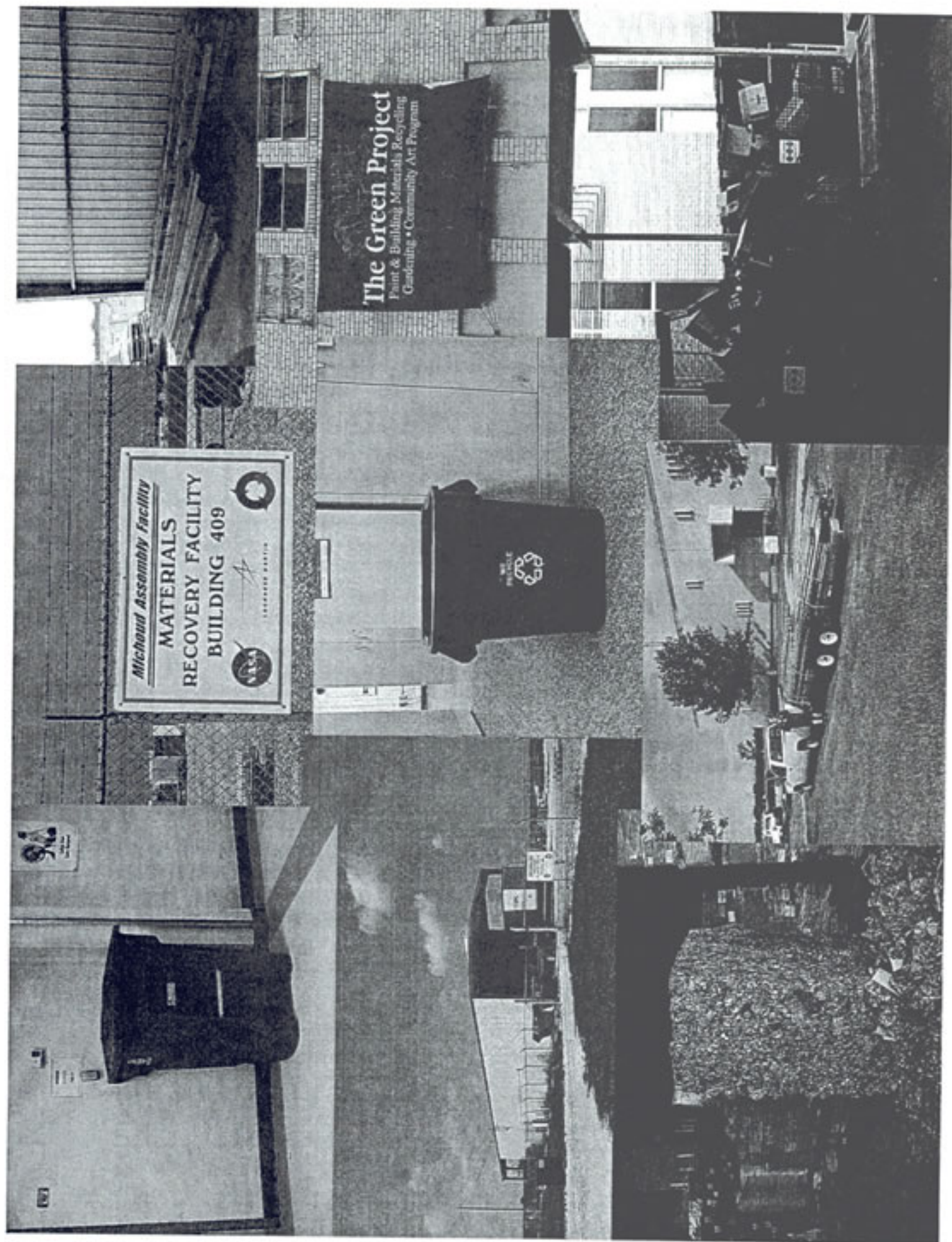
Using the waste management hierarchy, efforts have been made to eliminate or reduce the source of the waste streams included in this waste diversion/recycling project. The materials targeted for recycling have also been assessed for source reduction potential. To reduce the generation of waste paper, all copiers used by NASA and Lockheed Martin at MAF now have double-sided printing capability. Reports and documentation from vendors are requested in double-sided print format and electronic vs. paper record-keeping and distribution is standard practice. To reduce the quantity of waste wood generated, wooden crates received in shipping are returned to the vendor for re-use where feasible and sturdy, reusable pallets are used in lieu of the disposable pallets for most on-site applications. Promotion of source reduction, reuse, and recycling as a last resort were the only way to make this project effective.

Innovative Aspects / Departure from "Business As Usual"

Waste Reduction and Material Recovery is a waste diversion/recycling project like no other. Lockheed Martin had to depart from a "Business As Usual" mentality and look for new and innovative ideas. The primary innovative aspect of this program is forming a partnership with a vendor that specializes in materials recycling. Since recycling is their core business function, they have established the necessary infrastructure (including labor and management manpower resources) to effectively manage this process. The recycling vendor benefits by obtaining access to a consistent source of recyclable materials and the more effective they are in diverting these materials from our waste stream the more they can profit from their operations.

Another innovative aspect of this project is the on-site location of the vendors operations. By locating their operations on-site they are able to provide the best service to the entire facility while becoming familiar with the personnel and forming good working relationships with employees in each of the serviced areas. On-site operations also significantly reduce their transportation and overhead costs because the vendor is able to segregate, consolidate, compact and stockpile recyclable materials near the source of generation. The more efficient they are in managing recyclable materials diverted from our waste stream the more they can profit from the sale of this material.

An additional innovative aspect of this project is supporting a teaming effort between Lockheed Martin, Legacy Project, and The Green Project, a New Orleans non-profit organization that specializes in paint and building material recycling. Legacy donates the recovered wood to The Green Project for reuse. Therefore, even though this wood has essentially no recycle market value, Legacy has found a method of recycling the material and reducing our waste quantities in support of benefiting the partnership project.



Abstract: This paper examines the effects of the 1997 financial crisis on the economy of South Africa. It discusses the impact of the crisis on the country's financial system, its trade and investment relations, and its overall economic performance.

Keywords: 1997 financial crisis, South Africa, economy, financial system, trade, investment, economic performance.

1. Introduction: The 1997 financial crisis was a major event in the history of the world economy. It had a profound impact on the global financial system and on the economies of many countries, including South Africa.

2. The Impact of the Crisis on the South African Financial System: The crisis had a significant impact on the South African financial system. It led to a sharp decline in the value of the South African rand and a loss of confidence in the country's financial institutions.

3. The Impact of the Crisis on South Africa's Trade and Investment Relations: The crisis also had a negative impact on South Africa's trade and investment relations. It led to a decline in foreign investment in the country and a reduction in its trade with other countries.

4. The Overall Economic Performance of South Africa: Despite the challenges posed by the crisis, South Africa's economy managed to maintain a relatively stable growth rate. However, the crisis did lead to a period of economic uncertainty and a decline in the country's overall economic performance.

5. Conclusion: The 1997 financial crisis had a significant impact on the economy of South Africa. It led to a decline in the value of the rand, a loss of confidence in the financial system, and a negative impact on trade and investment relations. However, the country's economy managed to maintain a relatively stable growth rate.

6. References: The following references were used in the preparation of this paper: [1] [2] [3] [4] [5] [6] [7] [8] [9] [10] [11] [12] [13] [14] [15] [16] [17] [18] [19] [20] [21] [22] [23] [24] [25] [26] [27] [28] [29] [30] [31] [32] [33] [34] [35] [36] [37] [38] [39] [40] [41] [42] [43] [44] [45] [46] [47] [48] [49] [50] [51] [52] [53] [54] [55] [56] [57] [58] [59] [60] [61] [62] [63] [64] [65] [66] [67] [68] [69] [70] [71] [72] [73] [74] [75] [76] [77] [78] [79] [80] [81] [82] [83] [84] [85] [86] [87] [88] [89] [90] [91] [92] [93] [94] [95] [96] [97] [98] [99] [100].

7. Appendix: The following appendix contains additional information related to the 1997 financial crisis and its impact on the South African economy. It includes a table of the country's economic performance during the crisis and a list of the major financial institutions affected by the crisis.

8. Acknowledgements: The author would like to thank the following individuals for their assistance in the preparation of this paper: [1] [2] [3] [4] [5] [6] [7] [8] [9] [10] [11] [12] [13] [14] [15] [16] [17] [18] [19] [20] [21] [22] [23] [24] [25] [26] [27] [28] [29] [30] [31] [32] [33] [34] [35] [36] [37] [38] [39] [40] [41] [42] [43] [44] [45] [46] [47] [48] [49] [50] [51] [52] [53] [54] [55] [56] [57] [58] [59] [60] [61] [62] [63] [64] [65] [66] [67] [68] [69] [70] [71] [72] [73] [74] [75] [76] [77] [78] [79] [80] [81] [82] [83] [84] [85] [86] [87] [88] [89] [90] [91] [92] [93] [94] [95] [96] [97] [98] [99] [100].

9. Contact Information: The author can be contacted at the following address: [1] [2] [3] [4] [5] [6] [7] [8] [9] [10] [11] [12] [13] [14] [15] [16] [17] [18] [19] [20] [21] [22] [23] [24] [25] [26] [27] [28] [29] [30] [31] [32] [33] [34] [35] [36] [37] [38] [39] [40] [41] [42] [43] [44] [45] [46] [47] [48] [49] [50] [51] [52] [53] [54] [55] [56] [57] [58] [59] [60] [61] [62] [63] [64] [65] [66] [67] [68] [69] [70] [71] [72] [73] [74] [75] [76] [77] [78] [79] [80] [81] [82] [83] [84] [85] [86] [87] [88] [89] [90] [91] [92] [93] [94] [95] [96] [97] [98] [99] [100].

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13. Keywords: The following keywords are associated with this paper: [1] [2] [3] [4] [5] [6] [7] [8] [9] [10] [11] [12] [13] [14] [15] [16] [17] [18] [19] [20] [21] [22] [23] [24] [25] [26] [27] [28] [29] [30] [31] [32] [33] [34] [35] [36] [37] [38] [39] [40] [41] [42] [43] [44] [45] [46] [47] [48] [49] [50] [51] [52] [53] [54] [55] [56] [57] [58] [59] [60] [61] [62] [63] [64] [65] [66] [67] [68] [69] [70] [71] [72] [73] [74] [75] [76] [77] [78] [79] [80] [81] [82] [83] [84] [85] [86] [87] [88] [89] [90] [91] [92] [93] [94] [95] [96] [97] [98] [99] [100].

14. Summary: This paper provides a comprehensive overview of the effects of the 1997 financial crisis on the economy of South Africa. It discusses the impact of the crisis on the country's financial system, its trade and investment relations, and its overall economic performance. The paper concludes that the crisis had a significant impact on the South African economy, but the country managed to maintain a relatively stable growth rate.

**Application for Governor's Environmental Leadership Award
2001 Entry Page**

Title of Project: DeNora Anode / Cell Top Conversion

Applicant: Pioneer Americas, Inc.

Address: P. O. Box 23
St. Gabriel, LA 70776

Nature of Business: Chlor-Alkali Manufacturing Facility

Plant Manager: B. L. Bennett

Contact Name: Dana Oliver, Environmental Manager

Phone: (225) 642-1863

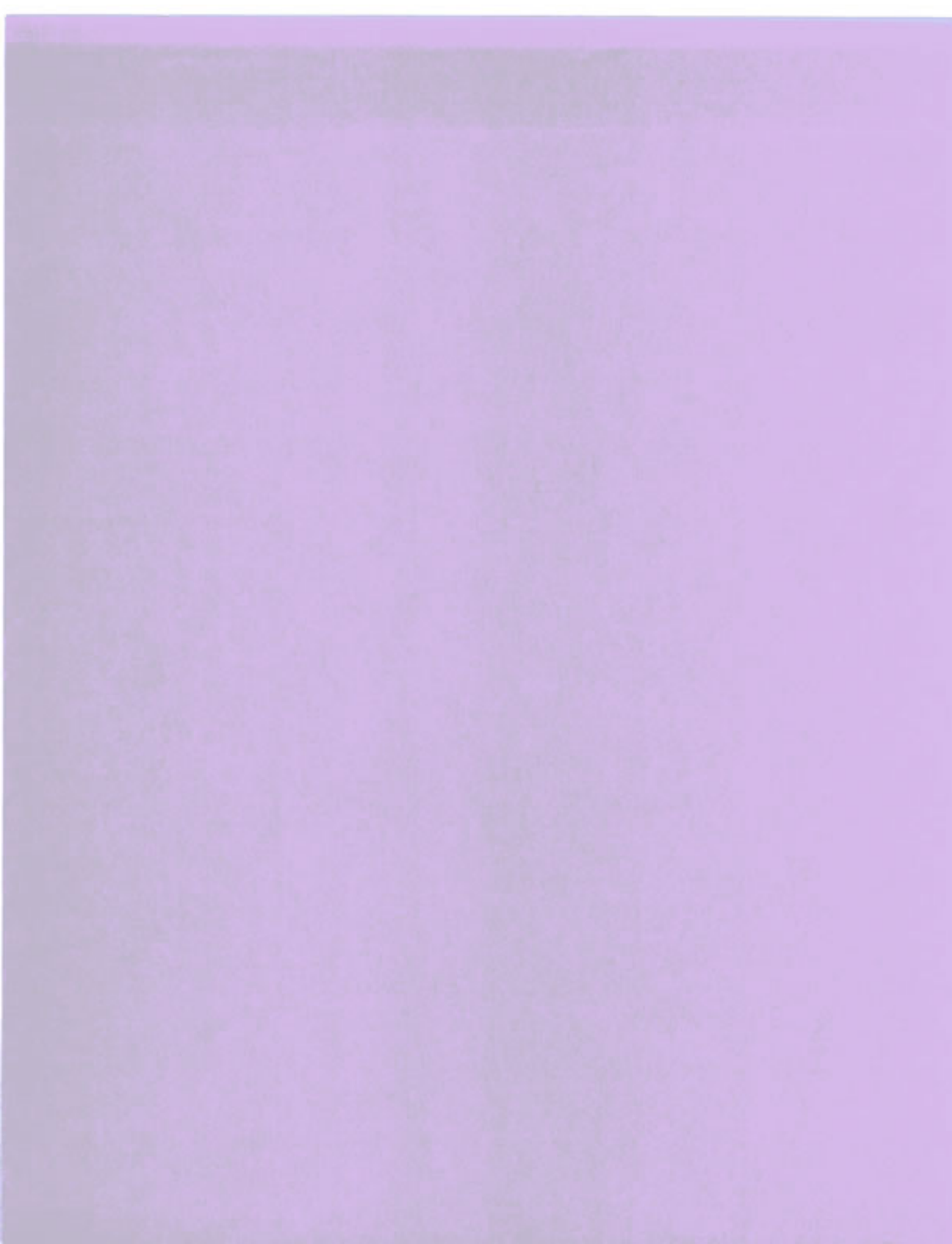
Fax: (225) 642-1882

e-mail: dsoliver@piona.com

Entry Type: Pollution Prevention

1. Pioneer recently completed a project to convert the cell tops and anodes of the electrolytic cells used in the mercury cell process to new state-of-the-art cell tops and anodes designed by DeNora. This complex conversion provides significant benefits such as reduced air emissions, reduced maintenance, reduced energy usage, and lower manpower requirements to operate. The new design incorporates a computer controlled process which results in greater control and enhanced efficiencies of the system. The new anodes, along with the computer-controlled anode adjustment system of the new cell tops, will reduce the number of times that cells will need to be opened to change anodes, thus significantly reducing air emissions. The new anode adjustment system will also reduce power consumption by the process, aiding Pioneer's ongoing energy conservation efforts.
2. The new design cell top and anode control system is designed to reduce cell openings for replacement of anodes by more than 60%, from once a year to once every three to five years. The need to open cells is one of the greatest sources of emissions within the cell house; this project will therefore significantly reduce total mercury emissions from the cell house. Our preliminary estimates are that mercury emissions will be reduced approximately 25%. In addition, the computer-controlled anode adjustment system is considerably more efficient than the old-style system. The contracted performance guarantee for the new system is a reduction of approximately 85.5 million kilowatt hours per year (enough to run the average home for over 1500 years).

3. This was a voluntary commitment of environmental leadership by Pioneer, not a response to any regulatory requirement. Pioneer, as a member of the mercury-cell chlor-alkali industry, has voluntarily committed to a 50% reduction in the use of mercury at the St. Gabriel facility by the year 2005. Pioneer has developed an integrated program which is designed to reach our goal even sooner. Progress made to date indicate the 50% reduction goal may be achieved as soon as the end of 2001. This project will help us go beyond our original commitment to achieve a greater than 50% reduction by 2005. In addition, with energy shortages occurring in many parts of the country and in Louisiana, this project will help conserve as much as 85.5 million kilowatt hours per year, a significant conservation benefit to the State of Louisiana.
4. Pioneer is a member of the American Chemistry Council and is committed to its Responsible Care® Codes of Management Practices which involve a commitment to improvements in pollution prevention. Therefore Pioneer is continually seeking methods for reducing air emissions in the cell house. This project is a major milestone in that direction. In addition to significant air emission reductions, operations and maintenance personnel working in the area have a lower risk of exposure. Pioneer's project reduces risks to human health and the environment, thus benefiting the community in which we work and play.
5. As the actual process equipment is being redesigned and replaced to reduce emissions from their source, this project is a source reduction project. This aspect of the redesign has been very important to Pioneer from the very beginning of the planning work. Reducing emissions and wastes at the source is the most beneficial means of improving our overall environmental performance; equating to the highest level of waste management hierarchy.
6. Pioneer is an innovative leader among the United States mercury-cell chlor-alkali industry. As for environmental leadership, Pioneer is the first mercury-cell chlor-alkali facility in the United States to install this new technology. Our competitors have also expressed considerable interest in following our lead in this area, and Pioneer expects this technology to become the state-of-the-art standard for this industry.



2001 ENTRY PAGE

Title of the project Black Bayou Refuge Environmental Center
Applicant International Paper -- Louisiana Mill
Address 705 Colliers Lane Bastrop, LA 71220
Nature of Business Paper Manufacturing
Senior Management Official/Plant Manager Greg Van Voorhis, Mill Manager
Contact Name, Title, Phone #, FAX # Kinny Haddox, Mgr--Communications 318-556-1479
Fax 318-556-1529
E-Mail Address Kinny.haddox@ipaper.com

Please check appropriate box: ☐ Pollution Prevention ☒ Community Environmental Outreach

For the Pollution Prevention Category

Please limit your entry to no more than 5 pages, including this page.

1. Describe the project clearly and concisely. Follow this 6-item format. Consider a simplified drawing to save words. Entries should be for stand-alone projects, not an ongoing program.
2. Describe the environmental improvement resulting from the project. The use of standardized measures of emissions such as TRI data and hazardous waste generation Biennial Report information is encouraged.
3. Note the degree to which the results of the project contributed to exceeding regulatory compliance requirements. Were they accomplished earlier than required? How does the project exemplify environmental leadership?
4. Describe any reductions in environmental risk resulting from the project.
5. Describe how the waste management hierarchy (source reduction, recycling, treatment and disposal as last resort) was utilized in planning and implementing the project. If the project is "end of the pipe" treatment, emphasize how the hierarchy applies.
6. Highlight the innovative aspects of the project that represent a departure from "business as usual." How does the project exceed the norms of your industrial sector (or organizational counterparts)? Again, how does the project exemplify environmental leadership?

For Community Environmental Outreach Category

1. Describe the project in sufficient detail. Is it innovative? Does it rise above usual "PR" activities? Does it exceed regulatory requirements (e.g., RMP)? Each entry must be for a single project, not an overall program.
2. Describe how the project contributed to community environmental quality improvement. What indicators were used to measure the effectiveness of the project?
3. Provide statements of at least two community individuals outside the company attesting to the success of the project.

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Questions should be addressed to: 225-765-0229 or 225-927-0816.

2001 Governor's Environmental Leadership Awards

Community Environmental Outreach Category

Black Bayou Refuge Environmental Education Center

Overview:

The environmental center at Black Bayou National Wildlife Refuge located north of Monroe in Ouachita Parish is an area that offers with unlimited potential for environmental education and enjoyment in northeast Louisiana. The development of this resource has come about quickly and efficiently because of the unique mix of support from government groups, private individuals, corporate sponsorships and involvement by companies such as International Paper. The first phase of construction at the center was a 400-foot wooden boardwalk, handicap - accessible fishing pier and observation deck on Black Bayou Lake that was constructed as a Partners for Wildlife Project between International Paper and the U.S. Fish & Wildlife Service. The entire project was also able to get off the ground several years ago as the result of a land swap between International Paper and the State of Louisiana which cleared the way for additional land purchases and eventually led to establishment of the refuge.

Today, the primary objective of the Refuge and its main support group, the Friends of Black Bayou (FOBB) environmental group, is to complete and begin utilization of the Black Bayou Refuge Environmental Education Center. The Center is housed in an old plantation home that has been restored by volunteers and by largely by donations from International Paper (see attached newspaper articles, video clip).

Project description:

The Environmental Education Center is already having impacts in many aspects of life in our area, even though it is not completely developed. For the sportsman and environmentally aware, it provides a unique place to study and enjoy the environment. For novices, it provides opportunities for both basic and indepth environmental studies. One of the main benefits of the site is that it is located just three miles from Monroe and programs that are being developed will provide hands-on environmental experiences for thousands of school children from the region.

International Paper was the first, and remains the largest, corporate contributor to this effort. Besides monetary contributions, the mill has also supplied materials for the Center, advertising for the Center and a grant for a Power Point slide show presentation and computer system to continue to promote the Center and its valued assets. Company officials voluntarily took on this project because of the huge potential and laid the groundwork for supporters of the area to acquire many more grants and support. Community and media attention already generated by the area attest to the success of the project.



Friends of Black Bayou, Inc. P.O. Box 9241, Monroe, Louisiana 71211

June 19, 2001

Mr. Hugh Finklea, Director
Environmental Leadership Program
Louisiana Department of Environmental Quality
P.O. Box 82263
Baton Rouge, Louisiana 70884-2263

Re: International Paper Company/Governors Environmental Leadership Award

Dear Mr. Finklea:

Mr. Kinny Haddox called me today and asked that I write you about the impact that International Paper Co. (IP) has had on the development and utility of Black Bayou Lake National Wildlife Refuge in Ouachita Parish (Monroe). He thought he was asking for a favor. For me, writing about IP's contribution to the quality of life in Monroe is like falling off a log. I say this because I have the distinct good fortune to be associated with the Friends of Black Bayou (FoBB) as the president since its inception in 1997. In our nearly four-year history, IP stands alone as our single most generous supporter (and we have several very generous supporters). As recently as June 2nd of this year, we held a ceremony to honor IP as one of our most valued "friends."

IP's support has been well in excess of \$50,000 and has resulted in the entirety of a 400-foot, handicapped-accessible observation/education/fishing pier that extends over the lake (enjoyed by literally thousands of people since its completion), a considerable contribution to the completion of our Environmental Education Center (to be officially opened Fall 2001), and the contribution of a portable multi-media array that, even as we speak, is in South Carolina with one of our members helping her tell people there about the extraordinary progress we are making here. In short, IP's support has been instrumental in our development of the Refuge. Its early interest provided the example for other companies and individuals to follow. Indeed, I can't over-estimate IP's contribution since it goes way beyond a simple monetary accounting. To wit, the 4,500-acre Refuge currently boasts the pier (mentioned earlier), the education center that has already hosted numerous school field trips, a fully equipped field biology curriculum, a mile of boardwalk that traverses a considerable expanse of wetlands, an arboretum, a wildflower meadow, and a boat launch. An observation tower to join our observation pier is currently under construction, as is a school bus turnaround.

In my day job I am a professor of economics at the University of Louisiana at Monroe. I never tire of telling people how the Refuge is an extraordinary addition to the quality of life in Ouachita Parish. In addition to the recreational aspects, which are obvious, the Refuge has also contributed to the Parish through tourism and, especially, through education, the single most important factor in economic development. I have met people from all over the country on the pier that IP built, many of whom report that they have stopped and/or extended their stay in Monroe to take advantage of the Refuge's attractions.

The Friends of Black Bayou, Inc., is a 501(c)(3) non-profit organization:
Dr. Robert C. Eisenstadt, President; Dr. Anna M. Hill, Treasurer; Dr. Fred Groves, Secretary.



Friends of Black Bayou, Inc. P.O. Box 9241, Monroe, Louisiana 71211

My recommendation is that you shouldn't waste another minute deliberating over who gets the Environmental Leadership Award. I can't think of any company in Northeast Louisiana that is more deserving than International Paper. Their generosity is exceeded only by their neighborliness, all of which has created much of the media attention, the culture of volunteerism, and the charitable donations that have made most of what you see at Black Bayou Lake NWR possible. My life and the lives of thousands of other people in the Monroe area are enriched by IP's contributions. Please don't hesitate to call me (318.342.1151) or write if you wish to discuss IP, FoBB, or the Refuge further.

Sincerely,

Robert C. Eisenstadt, President
Friends of Black Bayou, Inc.

george w. mouk & associates inc.

318 north 5th street

p. o. drawer 1761

phone 318-322-0588

monroe, la. 71201



July 26, 2001

Mr. Hugh Finklea, Director
Environmental Leadership Program
Louisiana Department of Environmental Quality
P. O. Box 82263
Baton Rouge, LA 70884-2263

RE: International Paper Company / Governors Environmental Leadership Award

Dear Mr. Finklea:

For generations Black Bayou Lake and the surrounding area have provided untold hours of outdoor recreation for the people of our community. It is a special place where both young and old have enjoyed the outdoors, and many young people have not only enjoyed the company of a guardian, but have also learned about the importance of our outdoor environment.

I believe that the most important thing that is happening at the Black Bayou National Wildlife Refuge is the development of an environmental education curriculum and the provision of facilities to teach both young and old about the wonders of nature.


In less than three decades our community has gone from a rural environment to an urban environment that offers very little opportunity to interface with nature and learn of its wonders. Over 50% of family units today have been victimized by divorce and as a result, many of our youth never have a guardian that can help them learn about the environment and as a result have become largely environmentally illiterate. It is in my opinion a tragedy that can have a monumental negative effect on our society.

International Paper Company has been the major corporate citizen that has helped our community acquire the preserve and improve the Black Bayou Lake Refuge. International Paper Company has utilized its influence with the political community to generate support among the governmental agencies that are now the custodians of this unique area. International Paper Company has funded several major projects to enhance the properties and our environmental education curriculum.

I believe that the Black Bayou Refuge will have a long lasting, positive influence, not only on our immediate community, but provide a prototype for other communities to emulate. I am confident we will be successful in our mission, and I am equally confident that International Paper Company will continue to be the reliable partner that we have come to rely on so heavily.

I urge you to recognize the efforts they have made in our refuge's behalf and the contribution that they make on a continuing basis wherever they have facilities.

With warmest regards, I remain

Cordially,

George W. Mouk
Environmentalist



Friends of Black Bayou, Inc. P.O. Box 9241, Monroe, Louisiana 71211

June 19, 2001

Mr. Hugh Finklea, Director
Environmental Leadership Program
Louisiana Department of Environmental Quality
P.O. Box 82263
Baton Rouge, LA 70884-2263

**Subject: Recommendation of International Paper Company for Governor's
Environmental Leadership Award**

Dear Mr. Finklea:

International Paper Company has been the most constant and faithful "Friend" that our organization, Friends of Black Bayou, could ever have imagined. For the four years of our history, IP has graciously and generously provided not only funds but encouragement for our efforts to support and enhance Black Bayou Lake National Wildlife Refuge.

As FoBB's director of public relations, I particularly appreciate the fact that IP has actually created a "bandwagon effect" in our community; that is, because of IP's support, many other companies and individuals have begun to contribute as well. Every time that IP makes yet another generous gift to FoBB (totaling more than \$50,000 to date), I am able to announce the fact to the local media, who are happy to report such community-minded actions. And every time, new memberships and contributions come rolling in.

I was particularly impressed—and thankful—when I was actually contacted by Mr. Kinny Haddox's representatives with the suggestion that we apply for an IP educational grant. Mr. Haddox (IP's director of Public Relations) then supplied us with all the needed information so that we could write an effective grant proposal. We decided that a laptop computer and portable projector would make it possible for us to go out into the community to educate people about the incredible resource—Black Bayou Lake National Wildlife Refuge—sitting right in their back yard. We received the grant, and this multi-media equipment is already being used extensively. I can hardly wait for the new school year to begin so that we can make presentations to children in area classrooms. You should see people's faces light up as they watch beautiful pictures of birds, cypress trees, and alligators fill the screen.

Of course, IP's largest contributions to FoBB (monetarily) have been toward the Refuge's 400-foot, handicapped-accessible wildlife observation pier and the almost-completed Environmental Education Center (a renovated, century-old planter's home). Classes of school-children, groups of scouts, and teachers learning about how to teach environmental science are already using these facilities.

The Friends of Black Bayou, Inc., is a 501(c)(3) non-profit organization:
Dr. Robert C. Eisenstadt, President; Dr. Anna Hill, Treasurer; Dr. Fred Groves, Secretary.



Friends of Black Bayou, Inc. P.O. Box 9241, Monroe, Louisiana 71211

However, my awe concerning IP's contributions to FoBB has to do most with the company's constancy. We—the members of Friends of Black Bayou—feel like the "chosen." IP has been there for us, and for Northeast Louisiana, over and over. The quality of life in this area is better now than it was four years ago because of the availability of environmental education and recreation at Black Bayou Lake National Wildlife Refuge, and International Paper has been in the forefront of providing that resource to the public. No gift has been too large or too small: for instance, most recently IP provided FoBB with three beautiful framed prints illustrating Louisiana birds, butterflies, and flowers. These prints are already hanging in the Center's multi-media classroom. And this is just the beginning.

International Paper Company could have walked away long ago, saying that they had done enough. But they haven't. I think that says it all.

Sincerely,

Ann Bloxom Smith
Public Relations Director
Friends of Black Bayou, Inc.